

# 1999 ANNUAL WATER QUALITY REPORT

## WATER TREATMENT/QUALITY DIVISION

### RANCHO DEL SOL LINDO

#### ADDITIONAL INFORMATION ON CONTAMINANTS DETECTED IN REQUIRED DRINKING WATER SAMPLES

##### Arsenic

The USEPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentration. At the time this report went to print, USEPA had not yet published the proposed reduced MCL for arsenic; however, the USEPA is expected to reduce the MCL for arsenic to a concentration between 10 and 3 ppb. For more information on arsenic, please visit our Website: [www.ci.tucson.az.us/water/](http://www.ci.tucson.az.us/water/)

Barium occurs naturally at very low concentrations in our ground-water.

Chromium occurs naturally at very low concentrations.

Fluoride is an important naturally occurring mineral that helps to form healthy teeth and bones. At concentrations above 2 ppm, fluoride can cause mild discoloration of teeth, and exposure at above the MCL of 4 can cause both sever discoloration of teeth and over many years of exposure, bone disease.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. If you are caring for an infant, you should ask for advice from your health care provider. By monitoring changes in nitrate concentrations in wells over time, and by increasing monitoring frequency as nitrate concentrations rise, Tucson Water provides additional assurance that nitrate values will not exceed safe limits.

Lead and Copper are generally less than 2.0 parts per billion (ppb) and 0.02 parts per million (ppm) respectively in source water. However, these metals can increase when water contacts plumbing materials containing lead pipe, lead soldered copper tubing, or brass valves. Because domestic plumbing is the primary source of these metals, drinking water regulations require testing of the water in contact with plumbing for at least 6 hours. Tucson Water has

identified a number of representative homes and businesses and takes samples at inside taps where water has been standing for the required amount of time. Instead of an MCL, the USEPA has set an action level. If more than 10% of the first draw samples (samples of water in contact with plumbing for at least 6 hours) are greater than 15 ppb for lead or 1.3 ppm for copper, the water system is required to optimize corrosion control to minimize the levels of lead or copper.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested by a private firm. You can also minimize exposure by using the first water out of your tap in the morning for something other than drinking. The USEPA recommends running the water for 30 seconds to 2 minutes to fully flush domestic plumbing, but Tucson Water has found that in general most of the lead comes from valves and faucets at the point of use. Flushing for only a few seconds will help assure that new valves and faucets do not increase lead in water drawn for drinking.

Alpha emitters are a measure of radioactivity due to naturally occurring minerals in groundwater. The MCL for gross alpha radioactivity is set at 15 picocuries per liter (pCi/l). This excludes the radioactivity contributed by either radon or uranium. The USEPA currently has no standards for uranium.

Bromoform is an unregulated Volatile Organic Contaminant that makes up the contaminant group known as Total Trihalomethanes, (TTHMs.)

##### TTHMs

Are formed when chlorine combines with naturally occurring material in water. Because the level of organic matter in our groundwater is extremely low, these compounds are found at very low concentrations.

The USEPA does not currently regulate radon in drinking water. In 1999, the USEPA proposed regulation that provides two options for the maximum allowable level of radon in drinking water. The proposed MCL is 300 picocuries per liter (pCi/L) for drinking water or a proposed alternative MCL of 4,000 pCi/L if states or water providers adopt a Multimedia Mitigation (MMM) program. The MMM program is designed to address radon in indoor air. (You can help develop this program for your area. For more information call USEPA's Radon Hotline or visit their web site.)

A comprehensive radon monitoring was performed on the Tucson Water system during 1999. Test results indicate that, when compared with other communities across the country, Tucson has fairly typical concentrations for radon in the water supply. For more information on radon, please visit our Website: [www.ci.tucson.az.us/water/](http://www.ci.tucson.az.us/water/) Because radon gas evaporates, water from the TARP treatment facility is free of radon gas.

#### INFORMATION ON EXTRA SAMPLING

Tucson Water collects significant numbers of samples in addition to those required under drinking water rules. This sampling provides important information for technical understanding of our system and provides our customers with additional information on the quality of the water they receive.

Radon is a naturally occurring radioactive gas that may cause cancer, and may be found in drinking water and indoor air. While ingesting radon in drinking water has a small lifetime risk, inhaling radon is a primary health concern, particularly for smokers or ex-smokers. Radon percolating up from the soil under homes and buildings is usually the main source of radon in indoor air. Only about 1-2 percent of radon in indoor air comes from drinking water.

If you are concerned about radon in your home, you should test your house and remediate it if you find a level of 4 pCi/l or higher in your indoor air. For more information, call USEPA's Radon Hotline (800-SOS-RADON) or visit the web site <http://www.epa.gov/iaq/radon/>.

## TUCSON WATER

#### WHO DO I CONTACT FOR MORE INFORMATION?

For more information on this Tucson Water report contact Tom Jefferson with the Water Treatment/Quality Division. Call 791-5252 or e-mail your questions to [tjeffer1@ci.tucson.az.us](mailto:tjeffer1@ci.tucson.az.us).

The Water Treatment/Quality Division also publishes an Annual Microbiological Water Quality report detailing the results of monthly distribution system monitoring. Call 791-5252 for more information.

Tucson Water also collects additional water quality data in a program known as "At the Tap." The parameters tested and analyzed under this program include: hardness, sodium, calcium, magnesium, pH, total dissolved solids, temperature, and free chlorine. The results of the "At the Tap" program are available at the Tucson Water web page and the Water Quality automated phone line.

Finally, Tucson Water conducts quarterly sampling from 30 different points throughout the distribution system (the system is divided into 10 water quality zones with 3 points in each zone). This sampling tests for: pH, chlorine, conductivity, TDS, alkalinity, fluoride, chloride, sulfate, sodium, potassium, calcium, magnesium, silicon, copper, iron, manganese, zinc, and nitrates. The sampling is done to provide Tucson Water and the community with more complete information on "what is in our water."

Customers can provide input into community water policy by providing comments to Tucson's Mayor and Council at regularly scheduled meetings, calling the Mayor and Council comment line at 791-4700, or attending a monthly Citizens' Water Advisory Committee meeting.

Telephone Numbers:		Additional information is also available from the Tucson Water web site:
United States Environmental Protection Agency		<a href="http://www.ci.tucson.az.us/water/">www.ci.tucson.az.us/water/</a>
Safe Drinking Water Hotline:	1-800-426-4791	
Tucson Water Quality Automated phone line	791-4227	
Tucson Water Public Information Office	791-4331	USEPA web site:
Tucson Water Treatment/Quality Division	791-5252	<a href="http://www.epa.gov/safewater/">www.epa.gov/safewater/</a>
Tucson Water Customer Advocate	791-4556	
Tucson Water Customer Service/Billing	791-3242	Si usted desea este documento escrito en español,
Tucson Water 24 hour Emergency	791-4133	por favor, llame al 791-4331.
City of Tucson TTY#	791-2639	

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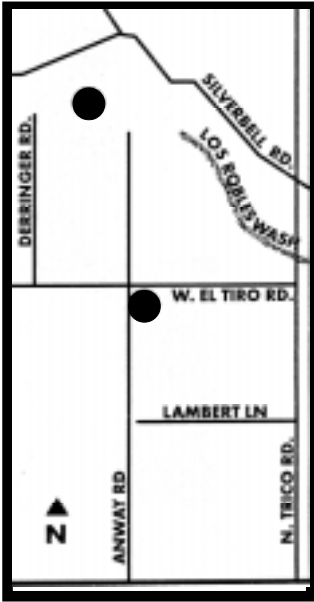
P.O. BOX 27210

TUCSON, AZ 85726-7210

DURING 1999, TUCSON WATER ENSURED THAT YOUR DRINKING WATER MET ALL UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND STATE

DRINKING WATER STANDARDS

Tucson Water is pleased to provide you with this Annual Water Quality Report, which contains important information about the quality of the drinking water that we deliver to you. The format for this report follows the guidelines set by the United States Environmental Protection Agency (USEPA) as part of the Safe Drinking Water Act. The USEPA requires all public water providers to deliver this information to all customers on an annual basis. This report tells you where your water comes from, what our test results are, and other things you should know about drinking water.



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RANCHO DEL SOL LINDO

RANCHO DEL SOL LINDO OVERVIEW

Rancho Del Sol Lindo is a Community located southwest of Silverbell and North Trico Road, with 957 services supplying about 2877 persons with water from two wells, W-002A and W-004A. The system was upgraded in the late 1990s by replacing gas chlorinators with hypochlorite units.

DEFINITIONS OF TECHNICAL AND REGULATORY TERMS

Action level. The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow.

Maximum Contaminant Level (MCL). The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. If a contaminant is believed to cause health concerns in humans, then the MCL is set as close as practical to zero and at an acceptable level of risk. Generally, the maximum acceptable risk of cancer is 1 in 10,000 with 70 years of exposure.

Maximum Contaminant Level Goal (MCLG). The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Parts Per Billion (ppb). Some constituents in water are measured in very small units. Organic compounds such as trihalomethanes are monitored by Tucson Water in terms of parts per billion (or micrograms per liter). To help you visualize how very small this unit is, we offer the following illustrations. One part per billion equals: One second of time in 31.7 years or the first 16 inches of a trip to the moon.

Parts Per Million (ppm). Many dissolved minerals such as sodium and calcium are monitored by Tucson Water in terms of parts per million (or milligrams per liter). To help you visualize how very small this unit is, we offer the following illustrations. One part per million equals: 2 ounces of water in a typical 15,000 gallon backyard swimming pool or one second of time in 11.6 days.

Picocurie Per Liter (pCi/l). The quantity of radioactive material in one liter which produces 2.22 nuclear disintegrations per minute.

ND. Non-detect.

INFORMATION ON EXPECTED DRINKING WATER CONTAMINANTS

In 1999, groundwater was the source of all of the drinking water delivered by Tucson Water. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. As water from rainfall and snowmelt filters through soil to become groundwater, it dissolves naturally occurring minerals, and in some cases, naturally radioactive materials, and can pick up substances resulting from the presence of organic matter, animals, or from human activity. One would expect to find beneficial minerals such as calcium and magnesium, harmless minerals such as chloride, bicarbonate, and sulfate, and metals such as iron, copper, arsenic, and lead, which may be either beneficial or harmless at low concentrations, but harmful at high concentrations. Groundwater in the Tucson area also contains very small amounts of naturally occurring organic compounds, which were originally formed by decaying vegetable and animal matter. Finally, groundwater may pick up pollutants from human industrial or domestic activities. For this reason, water utilities must monitor for some 80 man-made organic contaminants.

The following language is required by the USEPA to appear in this report, some of which may not be applicable to deep groundwater wells, the source of the Tucson Water supply: Contaminants that may be present in a source water can include: Microbial contaminants, such as viruses and bacteria, which may come from sewage, agricultural livestock, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA regulations limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Bottled water may come from either a surface water source or groundwater source, and may be treated minimally or extensively. For information on the quality of your bottled water, contact the water bottling company.

A SPECIAL NOTE TO AT-RISK POPULATIONS

While the Safe Drinking Water Act regulations are intended to protect consumers throughout their lifetime, some people may be more vulnerable to infections from drinking water than the general population. These “at-risk” populations include: immuno-compromised persons such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and in some cases, elderly people and infants. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA’s Safe Drinking Water hotline.

CONTAMINANTS DETECTED IN REQUIRED DRINKING WATER SAMPLES						
<i>Inorganic</i>	<i>Unit</i>	<i>MCL</i>	<i>MCLG</i>	<i>Maximum Value 1998</i>	<i>Maximum Value 1999</i>	<i>Major Sources</i>
Arsenic	ppb	50	NA	5.1	6.7	Erosion of natural deposits.
Barium	ppm	2	2	0.12	0.12	Erosion of natural deposits.
Chromium	ppb	100	100	None	14	Erosion of natural deposits.
Fluoride	ppm	4	4	0.73	0.75	Erosion of natural deposits.
Nitrate	ppm	10	10	2.5	6.2	Natural deposits, septic tanks, agriculture, sewage.
<i>Radioactive</i>						
Alpha emitters	pCi/L	15	0	5	none	Erosion of natural deposits.
<i>Volatile Organic Contaminants - Unregulated</i>						
Bromoform	ppb	80	0	0.8	none	Disinfection by-products
<i>1999 Lead and Copper in Standing Water Samples</i>						
<i>Contaminant</i>	<i>Unit</i>	<i>Action Level</i>	<i>No. of Samples Above AL</i>	<i>MCLG</i>	<i>90<sup>th</sup> Percentile</i>	<i>Major Sources</i>
Lead	ppb	15	0 of 10	0	ND	Corrosion of household plumbing.
Copper	ppm	1.3	0 of 10	1.3	0.073	Corrosion of household plumbing.

HOW IS OUR DRINKING WATER TREATED?

The groundwater delivered by Tucson Water meets all drinking water standards without treatment, with the exception of the water supplied from the Tucson Airport Area Remediation Project (TARP) wells. However, approximately 0.8 parts per million (ppm) of chlorine is added to the drinking water supply at well sites, and approximately 1 ppm is added to reservoirs and other facilities to provide assurance that water delivered to customers will remain free of microbiological contamination. This also ensures that the water meets microbiological drinking water standards from the time it is pumped from the ground until it reaches the customer’s tap.

